

## ABSTRACT OF THE DISCLOSURE

A semiconductor device has: a semiconductor substrate having a pair  
5 of current input/output regions via which current flows; an insulating film formed on  
the semiconductor substrate and having a gate electrode opening; and a  
mushroom gate electrode structure formed on the semiconductor substrate via the  
gate electrode opening, the mushroom gate electrode structure having a stem and  
a head formed on the stem, the stem having a limited size on the semiconductor  
10 substrate along a current direction and having a forward taper shape upwardly and  
monotonically increasing the size along the current direction, the head having a  
size expanded stepwise along the current direction, and the stem contacting the  
semiconductor substrate in the gate electrode opening and riding the insulating film  
near at a position of at least one of opposite ends of the stem along the current  
15 direction.